Abstract

An optical fiber 4 having a clad diameter of 125 μm is made by adding Ge to a core 41 having a core diameter of 8 μm and a relative refractive index difference of 0.3 %, and two refractive index grating portions 41a and 41b having a slant angle of 2° are formed in series in the optical fiber 4 by a phase mask method using KrF excimer laser (λ = 248 nm). The central period (2Λ) of the phase mask of a chirped grating is 1,140 nm, the chip rate (C) of the period is 1.2 nm/mm, the length (G) of the first and second index grating portions 41a and 41b is 8 mm, the effective refractive index of the first and second index grating portions 41a and 41b is 1.447, the refractive index modulation is 3×10^{-3}, and the gap between the first and second index grating portions 41a and 41b is 1 mm.